This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (withdrawn): A method of therapeutically treating stuttering via an implantable pump and a catheter having a proximal end coupled to an implantable pump and a discharge portion for infusing therapeutic dosages of at least one drug, as well as a signal generator and at least one implantable electrode having a proximal end and a stimulation portion, the method comprising:

implanting the at least one electrode adjacent to a first predetermined site in the brain;

implanting the catheter so that the discharge portion lies adjacent to a second predetermined site in the brain;

coupling the proximal end of the implanted electrode to the signal generator;

coupling the catheter to the pump; and

operating the signal generator and the pump to stimulate or inhibit neurons of the first and second predetermined sites in the brain by delivering electrical stimulation to the first predetermined site and by delivering at least one drug to the second predetermined site.

Claim 2 (withdrawn): The method of claim 1, wherein the first predetermined site is selected from the group consisting of the supplementary motor area, the perisylvian speech-language cortex, the centromedian circuit, the dorsomedial nuclei, the lateral prefrontal circuit, the mesothalamic reticular formation, the basal ganglia, and other paramedian thalamic and midbrain nuclei and fiber tracts including, the red nucleus, the habenulointerpeduncular tract, the prerubral area, the zona incerta, the thalamic primary sensory relay nuclei, the ventrooral nucleus, the ventrolateral nucleus, the parafasicular nucleus, and the intralaminar nucleus.

Claim 3 (withdrawn): The method of claim 1, wherein the second predetermined site is selected from the group consisting of the supplementary motor area, the perisylvian speech-language cortex, the centromedian circuit, the dorsomedial nuclei, the lateral prefrontal circuit, the mesothalamic reticular formation, the basal ganglia, and other paramedian thalamic and midbrain nuclei and fiber tracts including, the red nucleus, the habenulointerpeduncular tract, the prerubral

area, the zona incerta, the thalamic primary sensory relay nuclei, the ventrooral nucleus, the ventrolateral nucleus, the parafasicular nucleus, and the intralaminar nucleus

Claim 4 (withdrawn): A method of therapeutically treating stuttering via a signal generator and at least one implantable electrode having a proximal end and a stimulation portion, the method comprising:

implanting at least one electrode adjacent to at least one predetermined site in the brain;

coupling the proximal end of the implanted electrode to the signal generator;

operating the signal generator to stimulate or inhibit neurons of the at least one predetermined site in the brain via electrical stimulation.

Claim 5 (withdrawn): A method of therapeutically treating stuttering via transcranial magnetic stimulation, the method comprising: periodically stimulating, for a predetermined duration, a first predetermined site of a patient's brain using transcranial magnetic stimulation, wherein the first predetermined site is selected from the group consisting of: the supplementary motor area, the perisylvian speech-language cortex, the centromedian circuit, the dorsomedial nuclei, the lateral prefrontal circuit, the mesothalamic reticular formation, the basal ganglia, and other paramedian thalamic and midbrain nuclei and fiber tracts including, the red nucleus, the habenulointerpeduncular tract, the prerubral area, the zona incerta, the thalamic primary sensory relay nuclei, the ventrooral nucleus, the ventrolateral nucleus, the parafasicular nucleus, and the intralaminar nucleus.

Claim 6 (withdrawn): The method of claim 5, wherein the predetermined duration of transcranial magnetic stimulation is approximately 30 minutes.

Claim 7 (withdrawn): The method of claim 6, wherein the transcranial magnetic stimulation is periodically performed approximately once per week.

Claim 8 (withdrawn): A method of therapeutically treating stuttering via an implantable pump and a catheter having a proximal end coupled to the pump and a discharge portion for infusing therapeutic dosages of a least one drug, the method comprising:

implanting the catheter so that the discharge portion lies adjacent to a predetermined site in the brain; and

operating the pump to discharge at least one drug capable of stimulating neurons in to the predetermined site in the brain by delivering at least one drug.

Claim 9 (currently amended): A system for therapeutically treating stuttering in a patient comprising:

a signal generator;

at least one implantable lead, coupled to the signal generator, for delivering electrical stimulation to at least one predetermined site of the patient's brain;

a sensor, located near the patient's vocal folds, for generating a signal responsive to activity of the patient's speech-producing muscles;

a controller that performs speech-recognition processing on the signal from the sensor to detect stuttering and that adjusts at least one stimulation parameter in response to ~~the signal from the sensor~~detecting stuttering.

Claim 10 (currently amended) The system of claim 9, wherein the controller detects when the patient starts speaking and starts the electrical stimulation in response to detecting that the patient ~~having~~ has started to speak.

Claim 11 (original) The system of claim 10, wherein the controller stops the electrical stimulation a predetermined amount of time after the patient has started to speak.

Claim 12 (original): The system of claim 9, wherein the sensor is an electromyographic sensor.

Claim 13 (original): The system of claim 9, wherein the sensor is an electroglottographic sensor.

Claim 14 (original): The system of claim 9, wherein the sensor is a microphone.

Claim 15 (currently amended): The system of claim ~~9~~14, wherein the microphone is human-implantable.

Claim 16 (cancelled).

Claim 17 (withdrawn): A system for therapeutically treating stuttering in a patient comprising:

a pump;

at least one catheter having a proximal end coupled to the pump and a discharge end adjacent to a predetermined site in the brain;

a sensor for generating a signal responsive to activity of the patient's speech-producing muscles; and

a controller that regulates a drug dosage in response to the signal from the sensor to reduce activity, corresponding to stuttering, of the patient's speech-producing muscles.

Claim 18 (cancelled).

Claim 19 (withdrawn): A system for therapeutically treating stuttering in a patient comprising:

a pump;

at least one catheter having a proximal end coupled to the pump and a discharge end adjacent to a predetermined site in the brain;

a sensor that generates a signal responsive to EEG activity in the patient's brain; and

a controller that regulates a drug dosage in response to the signal from the sensor to reduce activity, corresponding to stuttering, of the patient's speech-producing muscles.

Claim 20 (new): The system of claim 9, wherein: the speech-recognition processing detects stuttering by detecting a predetermined number of repetitions of a speech pattern.

Claim 21 (new): A system for therapeutically treating stuttering in a patient comprising:

signal generator means for generating a signal;

implantable lead means, coupled to the signal generator, for delivering electrical stimulation to at least one predetermined site of the patient's brain;

sensor means, located near the patient's vocal folds, for generating a signal responsive to activity of the patient's speech-producing muscles;

controller means for performing speech-recognition processing on the signal from the sensor means to detect stuttering and for adjusting at least one stimulation parameter in response to detecting stuttering.

Claim 22 (new) The system of claim 21, wherein the controller means detects when the patient starts speaking and starts the electrical stimulation in response to detecting that the patient has started to speak.

Claim 23 (new) The system of claim 21, wherein the controller means stops the electrical stimulation a predetermined amount of time after the patient has started to speak.

Claim 24 (new): The system of claim 21, wherein the sensor means comprises: an electromyographic sensor.

Claim 25 (new): The system of claim 21, wherein the sensor means comprises: an electroglottographic sensor.

Claim 26 (new): The system of claim 21, wherein the sensor means comprises: a microphone.

Claim 27 (new): The system of claim 21, wherein the microphone is human-implantable.

Claim 28 (new): The system of claim 21, wherein: the speech-recognition processing detects stuttering by detecting a predetermined number of repetitions of a speech pattern.